

and other European dances. The author enjoyed himself so much in Ohinemotu that he spent all his money and had to travel to Tauranga on foot. Here he saw the ceremony of nose-rubbing performed with great solemnity; it is, however, now kept up almost only by the old; the young Maoris have taken to kissing as a substitute. There is still a wide tract of the northern island of New Zealand 1,000,000 acres in extent, known as King Country, inhabited by about 10,000 Maoris under King Tawhiao, who keep themselves free from British rule, and do not permit whites to enter their country. King Country seems to be a thorn in the side of the Government, and the city of refuge of murderers and thieves, who are there out of harm's way.

At the Fiji group, the author visited only one island, that of Kandavu, at which the mail steamers call. He, however, explored a great deal of this island, in company with the natural history collector employed by Goddefroy Brothers, Herr Kleinschmidt, who is laboriously exhausting the fauna of the Fiji group, collecting carefully for several months in each island. The author's account of Kandavu, and especially of the natives, is full of interest. One of his observations may be cited here. A Fijian youth, employed as an assistant in collecting, whose body was already beautified by many cicatrizations, was devoting his attention to two groups of small suppurating wounds on the outer side of each upper arm. When visitors from neighbouring villages were present, he used to open these wounds anew and inflame them with a burning stick, or sand, or by scratching them with glass, in order to show his fortitude, never moving a muscle of his face in public, but making very wry faces afterwards in private. Many other youths had similar wounds on their upper arms, and it turned out that vaccination was being carried out by the Government in Kandavu, village by village, and that pustules on the upper arm were hence the fashion. The dandies would not wait till the turn of their village arrived, or perhaps the natives wished to avoid the actual operation by giving their arms the appearance of having been already vaccinated.

The author very rightly denounces the absurd method of spelling the Fijian language introduced by the missionaries. Because, in Fijian words, before the sounds *d g k* and *m*, an *n* nearly always is sounded, and before *b*, an *m*, the missionaries in first writing the language chose to omit the *m* and *n* in all cases in spelling before these letters, which complicates matters unnecessarily, and must eventually give great trouble to Fijians when they come to read English. Thus Thakombau, the name of the former king of Fiji, is spelt Thakobau. Kandavu is spelt Kadavu. Some writers have carried useless confusion still further, and have rendered *th* by *c*, so that Thakombau becomes Cacobau, and so it was most often spelt in newspapers at the time of the annexation of Fiji, so that English readers derived very little impression of the real sound of the name.

The author proceeded to Honolulu by Pacific mail steamer. Amongst the passengers was a San Francisco concert company and a reverend Yankee travelling lecturer. The concert company hoped to give a performance on the day on which the steamer stopped at Honolulu on its way to San Francisco, but the lecturer had been too sharp for them, and had engaged the only available hall

long beforehand, and they found the town posted all over with advertisements of his lecture on the Tower of London. The author visited Hilo, in Hawaii, and the volcano of Kilauea. He returned from Hawaii to Honolulu in an open whale-boat, touching at the island of Maui on the way, an exploit which seems to have astonished the people of Honolulu extremely, since they have come to rely upon schooners and steamboats entirely for such long passages, and no longer make the voyage, as of yore, in war canoes. The author's account of San Francisco and its Chinese quarter is hardly so interesting as the earlier part of the book, as this quarter has been done to death in so many books of travel, and after all Chinese life at San Francisco is in all essentials identical with Chinese life at home. Perhaps before many years we shall have a Chinese quarter in London.

The official account of the Pacific railroads, sold on the line, "Williams' Pacific Tourist," which is got up in the interests of the railroad companies, is very properly denounced by the author. It is, indeed a shameless puff of the supposed beauties of the scenery on the line of the railroad, which exist for the most part only on paper and in the fervent imagination of the writer. An account of Salt Lake City and Niagara close Dr. Max Buchner's very pleasant volume. Some passages in the book are rather free in their tone; a case of midwifery on board ship is described with needless detail; many of the doings of Polynesians are also described with little reserve.

#### OUR BOOK SHELF

*Index Medicus. A Monthly Classified Record of the Medical Literature of the World.* Compiled under the Supervision of Dr. John S. Billings, Surgeon U.S. Army, and Dr. Robert Fletcher, M.R.C.S. Eng. (New York, F. Leypoldt; London, Trübner and Co.)

FOR some time back Dr. Billings, of the United States Army, has been engaged in the preparation of an Index-Catalogue of the library of the surgeon-general's office at Washington. To those who do not understand what this work is, this may not seem to be at all extraordinary, but those who know that the work is really an universal catalogue of medical literature, giving not only the names of the authors, but the subjects of the papers which have appeared in all medical periodicals throughout the world from the time of their first issue until the present, will be astonished that any man has had the courage to undertake such a task, and still more to learn that the MS. of this catalogue is now nearly ready for press, and is only awaiting the authority of Congress to print it. For the sake of medicine throughout the world we trust that this authority will be granted without delay, for to every man who has the interests of medicine at heart this work will be an invaluable boon. It has been suggested that such a catalogue should be supplemented by some current publication, which should show all recent works, together with articles and periodicals arranged by subjects, and the present publication has been issued to supply this want.

"In its pages the practitioner will find tables of parallels for his anomalous cases, accounts of new remedies, and the latest methods in therapeutics. The teacher will observe what is being written or taught by the masters of his art in all countries. The author will be enabled to add the latest views and cases to his forthcoming work, or to discover where he has been anticipated by other writers; and the publishers of medical books and periodicals must necessarily profit by the publicity given to their productions."

Dr. Billings very sensibly suggests that all medical men who approve of the objects of this Index, will put their approval into practical shape by subscribing promptly for the Index and taking care that a copy of every book, pamphlet, &c., of which they are the authors, is forwarded to the editors. This recommendation we heartily endorse, and trust that so useful a publication may receive the support it deserves.

### LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

#### The Tides at Chepstow and Fundy

IN NATURE, vol. xix. p. 363, Mr. Moseley, of Exeter College, Oxford, quotes a passage from Lyell's Principles, to the effect that the tides at Chepstow have a range of 72 feet.

This statement is continued in the last edition (1875), in Chap. XX., on Tides and Currents, p. 492; and the tidal range in the Bay of Fundy is set down at 70 feet (p. 564). I do not believe either of the statements.

The Admiralty Tide Tables give the following:—

	Spring Range.	Neap Range.
	Feet.	Feet.
1. Chepstow ... ..	38	28.5
2. Bay of Fundy (Noel Bay) ...	50.5	43.5

I may add that Lyell's whole treatment of the subject of the tides is loose and inaccurate. Thus, for example, he says (p. 491): "In any given line of coast the tides are greatest in narrow channels, bays, and estuaries, and least in the intervening tracts where the land is prominent."

He then proceeds to illustrate this proposition by giving the ranges of tide from the mouth of the Thames to Flamborough Head (including, of course, the well-known tidal node of minimum range off Yarmouth); but he is utterly unconscious that these ranges depend altogether on the tidal motion of the water, and have no relation whatever to the form of the coast.

Trinity College, Dublin, March 3 SAM'L. HAUGHTON

#### Magnetic Storms

It is surprising that an accomplished telegraphist like Mr. Mance (NATURE, vol. xix. p. 409) should not see the necessity and advantage of expressing earth-currents in webers. It is precisely because every one can, if he likes, appreciate the magnitude of an earth-current so expressed, and no one but himself can do so if Mr. Mance's plan were adopted, that I advocate the weber, or rather, its more convenient sub-multiple, the milliwbeber. A milliwbeber is the current produced by one Daniell's cell (strictly one volt), through 1,000 ohms. Currents can be reduced to this unit from any galvanometer. The tangent galvanometer is, perhaps, the simplest to use—it is that which we employ in England. Supposing for simplicity that your constant, viz., one Daniell cell through 1,000 ohms (including cell and galvanometer) gives 45°, then the tangent of any other reading will give you the current in milliwbebers. Then, knowing the resistance of your circuit and its geographical position, you have all the data necessary to determine the elements of earth-currents.

I will act on Mr. Mance's suggestion, and bring the matter before the Society of Telegraph Engineers with a view of organising a systematic mode of observation in different parts of the world.

W. H. PREECE

Wimbledon, March 8

#### Atmospheric Pressure and Solar Heat

MAY I be permitted to supplement the table given by Mr. Allan Broun in NATURE, vol. xix. p. 7, by the following figures for Calcutta. The pressure anomaly at Bombay for each year, as given by Mr. Broun, is here compared with Calcutta, and the table is extended down to 1877:—

Table Showing Difference of Mean Pressures at Calcutta as Compared with Bombay for the whole Year and the Summer Months, the Sign + Indicating an Excess at Calcutta, and — a Defect; and Character of the Rainfall in the North-West Provinces and Behar.

Year.	Year.	Summer.	—
1847	-37	+ 5	Excessive.
1848	+ 7	-13	Defective.
1849	+14	+ 5	Excessive.
1850	+21	+ 5	Average.
1851	+ 8	+11	Excessive.
1852	+16	+18	"
1853	-19	-31	Defective.
1854	+ 1	- 2	Excessive.
1855	-10	-30	Defective.
1856	- 2	- 1	Average.
1857	- 9	-10	Defective.
1858	- 3	- 9	"
1859	+ 8	+26	Excessive.
1860	-15	-13	Defective.
1861	-12	- 3	Average.
1862	+12	+15	Excessive.
1863	- 7	-16	Defective.
1864	-14	-27	"
1865	+15	+13	Excessive.
1866	-10	-20	Defective.
1867	+ 5	+ 4	Average.
1868	- 6	-13	Defective.
1869	+ 1	+ 5	Excessive.
1870	+ 3	+ 4	"
1871	-37	- 3	"
1872	+13	+18	"
1873	+ 3?	-11	Defective.
1874	+ 5?	+24	Excessive.
1875	-15	- 2	Average.
1876	-24	- 5	Defective.
1877	+14?	+ 3	"

Since from 1847 to 1852 there are frequent blanks in the registers, sometimes exceeding ten days in length, the figures are of somewhat doubtful value.

It will be seen on examination that the decennial period is nearly as distinctly marked at Calcutta as at Bombay, though the minor fluctuations are more frequent, and that, as Mr. Chambers supposed, the amplitude of the anomaly, like that of the diurnal and annual variation, is greater at Calcutta than at Bombay.

Mr. Broun considers the discovery of the decennial period of barometric pressure to be one of great importance, as forming a link in the chain of evidence which connects the variations of rainfall with those of the sun's heat. As an illustration of the way in which the variations of pressure influence the distribution of rainfall, I have entered a word descriptive of the character of the rainfall of each year in the North-West Provinces and Behar. In the great majority of cases a relatively low pressure at Calcutta, especially during the summer months, April to September, means defective rainfall over the valley of the Ganges, which is watered by easterly winds from the Bay of Bengal, and a relatively high pressure at Calcutta means excessive rainfall. Had the station with which Calcutta is compared been situated seven or eight degrees to the north of Bombay, the rule would probably have been without exception. The influence of what he calls the "relative barometric anomalies" upon the distribution of rainfall in India has been pointed out by Mr. Blanford on more than one occasion since 1868, and the examples here given will illustrate and enforce this point.

Mr. Broun's remarks regarding the relations between the range of the monthly means of barometric pressure and that of the monthly mean temperature, are interesting as confirming the views put forward by General Strachey, as long ago as 1850, in an unpublished work on the physical geography of the Himalaya and the neighbouring countries. The range of the monthly mean pressure at Calcutta is 0.488 inch, and that of the monthly mean temperature 18°6 F. The range for one degree is therefore .026 inch, a figure which differs little from those for Madras, Bombay, and Trevandrum.

S. A. HILL

Allahabad, December 7, 1878

12